STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

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February 06, 2008

Contract No. 04-0120F4
04-SF-80-13.2 / 13.9
Self-Anchored Suspension Bridge
Letter No. 05.03.01-001305

Michael Flowers
Project Executive
American Bridge/Fluor Enterprises, a JV
375 Burma Road
Oakland, CA 94607

Dear Michael Flowers,

Schedule Review for January 2008

The Department has completed review of Submittals ABF-SUB-000557R00, "Project Schedule Revision No. 16," (Primavera file "ABF.U16.R0.012008.xer") and ABF-SUB-000558R00, "Project Schedule Status No. 16," (Primavera file "ABF.U16.S0.012008.xer").

The status file "S0" is an update of the December 2007 schedule which contains actual start dates, actual finish dates, estimated remaining durations and expected finish dates with a data date of January 20, 2008. Submittal ABF-SUB-000558R00 is "Accepted as Noted" per the comments made in the January 30, 2008 Weekly Schedule Meeting regarding the reconciliation of the actual dates and as outlined by the comments below. Additionally, there are 14 activities that contain different actual start dates when compared to the proposed revision schedule (Refer to Appendix A). Review and revise accordingly.

The revision file "R0" is ABF's proposed revision schedule for completing the Project. This schedule also contains actual start dates, actual finish dates, estimated remaining durations and expected finish dates with a data date of January 20, 2008. Submittal ABF-SUB-000557R00 is "Not Accepted" for the following reasons:

1. The proposed revision schedule compresses the already tight OBG segment assembly activities. The number of segments proposed to be assembled simultaneously has increased to 20. A detailed analysis showing available equipment, facility space and how ABF intends to complete 20 segments simultaneously is required before such an aggressive schedule can be accepted.
2. The schedule reflects an average production rate of 5 days per segment to complete the entire segment assembly from the base plate to the corner assembly. Based on baseline schedule review discussions, it was noted that ZPMC will perform this work in one 8-hour shift, including inspection and weld repairs as necessary. Confirm that this can be achieved or revise the segment assembly activities.
3. There are numerous activities in the schedule that contain insufficient detail. The Department has provided a listing of activities that require additional detail in each month's schedule response since the August 2007 schedule submission issued via State letter 05.03.01-000551. As agreed to during the baseline schedule development, detailed activities were to be provided by ABF 6 months in advance. To date, detail has not been provided for activities already in progress. More effort needs to be made to add more detail to the fabrication and construction of key components such as T1 Tower, OBG, Hinge K, saddle, etc.

4. The Department understands that major revisions to the T1 Tower fabrication and OBG fabrication are forthcoming in a February or March 2008 schedule revision. It is our understanding that ABF is planning to provide schedule details that match the approved fabrication plans for both T1 Tower fabrication to the segment and shaft level and the OBG fabrication to the segment level for both the eastbound and westbound structures. This level of detail may address many of the Department's concerns and will help facilitate acceptance of ABF's proposed schedule revisions.

The following schedule comments are in response to Submittals ABF-SUB-000557R00 and ABF-SUB-000558R00. It is important to note that this schedule review is not all-inclusive due to the significant changes that have occurred since the December 2007 schedule submission.

A **Project and Schedule Status**

A1 **Number 1.6.1:** Based on the observations provided in Items 1 through 4 above and the comments outlined below, the Department cannot agree that there is a shift in the critical path activities from the December 2007 schedule submission. The Department understands that ABF will modify the schedule constraints associated with saddle fabrication which will remove the negative float associated with these activities.

A2 There are numerous activities that contain lag relationships. The use of these relationships creates difficulties in monitoring and tracking progress. Many finish-to-start lag relationships should represent activities. It is preferred that the lags are replaced with task activities and the use of lags minimized. Refer to the attached lag report on the main schedule (ABF.U16.R0.080120 SAS Project - Update 16 dd 01/20/08 rev 0) for a list of activities with lag greater than 5 days (Refer to Appendix B). It is requested that the list of activities is discussed during the Weekly Schedule Meetings.

A3 There are numerous activities in the schedule with durations greater than 20 days. As agreed during our Weekly Schedule Meetings, activities with durations greater than 20 days starting within six months of the data date will be broken down into more detailed activities with appropriate durations. The activities of particular concern are attached. Modify the activity type to a level of effort and provide additional details of the summary activities as agreed (Refer to Appendix C).

B **Area Specific Detail – W2 Cap Beam** - No Comments

C **Area Specific Detail – Temp Towers**

C1 The secondary responsibility code for construction activities of Temporary Towers A, B and C that will be performed by Traylor-Dutra is inaccurate. Review and revise accordingly.

C2 The Traylor-Dutra schedule provided in ABF-TRN-690 does not show that the east and west foundations for Temporary Tower A will be constructed simultaneously as shown in the January update. Review and revise accordingly.

C3 The current resources associated with Temporary Towers A and B appear to be incorrect. Review and revise accordingly.

C4 The December 2007 update schedule showed that Temporary Towers A through G east and west and Trusses A through G east and west were going to be constructed prior to the construction of the T1 erection tower base. The January 2008 revision schedule shows that there is a change in the

erection sequence, such that Temporary Towers A through G east and west and Trusses A through D will be constructed prior to the erection of the T1 erection tower base. This change in construction sequence was not included in the narrative. Provide the reasoning for this change and in future, include any and all changes to the temporary tower erection sequence in future narratives.

C5 It was indicated in the January 24, 2008 T1 Erection Tower Team Meetings that only one bent of Temporary Tower D west would be constructed prior to the construction of the T1 erection tower base. The January 2008 schedule shows that construction of Temporary Tower D west (TTCON000610- Erect Tower - TT DW) will be completed prior to construction of the T1 erection tower base (T1CON000030- Construct Erection Tower Base - T1 Tower). Review and revise accordingly.

C6 The finish dates for the fabrication of piles D and F (TTFABBH0220-Fabricate Piling - TT D (E&W) and TTFABBH0300-Fabricate Piling - TT F (E&W)) were actualized as October 20, 2007 in the November update schedule. It was understood at the December 5, 2007 Weekly Schedule Meeting that this date was for the original contract work and that there was a CCO between ABF and Twin Brothers to extend the length of the piles. It was also understood that the October 20, 2007 date would be changed to reflect the correct actual finish date which includes the CCO work. The actual finish date for fabricating piling D and F appears to be December 31, 2007 according to the 4-Week Rolling Schedule data date December 31, 2007. Review and revise accordingly.

D **<u>Area Specific Detail – OBG / Bridge Deck</u>**

D1 The January 2008 schedule shows that 20 segments will be in assembly at the same time in April and May 2008 and 16 segments will be in assembly simultaneously in August 2008 and January 2009 (Refer to Appendix D). Confirm that there is adequate floor space and resources to accommodate 20 simultaneous segment assemblies.

D2 The schedule indicates that the base plate, side plate, floorbeam, longitudinal diaphragm, deck plate and corner assemblies for Segments 9A, 9B, 11A and 11B will be assembled all at once in 10 days as shown below. This logic is incorrect since the deck plate cannot be assembled until the base plate, side plate, floorbeam and longitudinal diaphragms are installed. The corner plate cannot be assembled until after the deck plate is in place according to the fabrication procedure. The sequence of activities for segment assembly of the other segments is reflected correctly in the schedule update. Revise the logic ties for segment assembly of Segments 9A, 9B, 11A, and 11B.

Activity ID	Activity Name	Start	Finish	Original Durat...	Total Float
SAS Project - Update 16 dd 01/20/08 rev 0		27-Aug-08	16-Jan-09	103	87
Bridge Deck		27-Aug-08	16-Jan-09	103	87
Fabrication		27-Aug-08	16-Jan-09	103	87
Lifts 9, 10		27-Aug-08	06-Sep-08	8	107
BDFABBH2750	Fabricate Structural Steel - BP, SP, Floorbeam & Long. Diap. Segment Assembly - (9A,9B) - Bridge Deck Lifts 9E, 9W	27-Aug-08	06-Sep-08	10	116
BDFABBH2752	Fabricate Structural Steel - Segment Assembly - Install Deck Plate (9A,9B) - Bridge Deck Lifts 9E, 9W	27-Aug-08	06-Sep-08	10	116
BDFABBH2754	Fabricate Structural Steel - Segment Assembly - Install Corner Sub Assembly (9A,9B) - Bridge Deck Lifts 9E, 9W	27-Aug-08	06-Sep-08	10	116
Lifts 11, 12		06-Jan-09	16-Jan-09	9	87
BDFABBH3260	Fabricate Structural Steel - BP, SP, Floorbeam & Long. Diap. Segment Assembly - (11A,11B) - Bridge Deck Lifts 11E, 11W	06-Jan-09	16-Jan-09	10	93
BDFABBH3262	Fabricate Structural Steel - Segment Assembly - Install Deck Plate (11A,11B) - Bridge Deck Lifts 11E, 11W	06-Jan-09	16-Jan-09	10	93
BDFABBH3264	Fabricate Structural Steel - Segment Assembly - Install Corner Sub Assembly (11A,11B) - Bridge Deck Lifts 11E, 11W	06-Jan-09	16-Jan-09	10	93

D3 The production rates (days/segment) for the three different activities in the OBG segment assemblies appear to be aggressive. The schedule currently shows that it takes the same number of days (10 to 15 days) to assemble the base plate, side plate, floor beam and longitudinal diaphragms as it does the deck plate and corner plate (Refer to Appendix E). It appears that it would take longer to assemble the base plate, side plate, floor beam and longitudinal diaphragms since there are more components in a limited space. Review, comment and revise accordingly.

E **Area Specific Detail – T1 Tower** – See comments 3 and 4

F **Area Specific Detail – Cable System**

F1 **Numbers 6.2.1.1 and 6.2.2.1:** See comment H6

G **Area Specific Detail – E2 Cross Beam**

G1 **Number 7.1.3.1:** The Department understands that fabrication of E2 falsework has commenced at the Contractor's risk as the E2 Falsework Design Submittal ABF-SUB-000515 has yet to be approved.

G2 **Number 7.2.1.1:** As discussed in the January 30, 2008 Concrete Team Meeting, at this time ABF will not be required to perform an as-built survey of the existing column cages at E2 for incorporation into the ISDs.

H **Area Specific Detail – MEP Services**

H1 **Number 8.2.1.1:** As previously discussed, the Department does not anticipate impacts to tower fabrication due to Submittals 174R1, 175R1, 176R1 and RFI 1134. RFI 1134 should have no impact on shop drawing development. Steel shop drawings should be submitted as soon as possible.

H2 **Number 8.2.1.2:** This issue has no impact on the tower shaft shop drawing development. RFI 1141 was responded to on 1/22/08.

H3 **Number 8.2.1.3** - This issue has no impact on the crossbeam and service platform shop drawing development. RFI 1136 was responded to on 1/30/08.

H4 **Number 8.2.1.4** - The Department will continue to work with ABF to resolve these miscellaneous issues. Structural steel shop drawings should not be impeded or delayed. The development of shop drawings should include the data and directions from the RFI responses. If a conflict is identified, it should be discussed at the appropriate team meetings to develop a plan of action.

H5 **Number 8.2.1.5** - Tower head steel detailing should not be impeded or delayed due to the response of these RFIs.

H6 **Number 8.2.1.6** - ABF's Cable Light Fixture Submittal was rejected with comments because it did not meet all of the specification requirements. The Department is waiting for the re-submittal of the light fixture. As previously stated, none of the structural components or attachments for the light fixture will need to be changed. The only modifications needed are to the electrical components and cosmetic features within the fixture. The Department's response to RFI 270 will address the issue with main suspension cable conduit routing.

H7 **Number 8.2.1.7** - ABF's attention is directed to General Note 21 on Plan Sheet E-8. In addition the Department is providing additional details via CCO 42S1 to help coordinate cable tray routing. Please note that the Department has already responded and resolved all RFIs related to this change order. The input provided by ABF during the CCO 42S1 meetings will help streamline the cable tray and support fabrication.

H8 **Number 8.2.1.8** - The discussions at the Working Drawing Campus are helping refine the final CCO 31 document to include all necessary RFI responses.

H9 **Number 8.2.2.1 and 8.2.2.2** – State letter 05.03.01-001188 transmitted on 1/23/08, provided ABF with the latest update on OBG penetration information. The Department is working with ABF to incorporate any additional Tower penetrations. Procedures to improve and expedite coordination efforts in the determination of MEP penetration locations and the preparation and review of shop drawings for the OBG and the T1 Tower have been implemented. These procedures include expediting resolution of RFIs and Shop Drawing reviews. Drawings that are currently being "Approved as Noted" can be released for fabrication as required. Therefore, any necessary resubmittal "for record" of final drawings should not delay the Project.

Sincerely,

GARY PURSELL
Resident Engineer

Attachment
- A- Actual Start Date Variations
- B- LagReport_MainSchedule_greaterthan5d.pdf
- C- Durations_Greater_20days.pdf
- D- Number of OBG Segments Assembled Simultaneously
- E- OBG Segment Assembly Durations

cc: Don Ross
file: 05.03.01, 26.05